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Garrett **Hardin 68** explains the tragedy of the commons[[1]](#footnote-1)

The tragedy of the commons develops in this way. **Picture a pasture open to all**. It is to be expected that **each herdsman will try to keep as many cattle as possible** on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy. **As a rational being, each herdsman seeks to maximize his gain.** Explicitly or implicitly, more or less consciously, he asks, “What is the utility to me of adding one more animal to my herd?” This utility has one negative and one positive component. 1) The positive component is a function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly 11. 2) The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of 21. Adding together the component partial utilities, **the rational herdsman concludes** that the only sensible course for him **to** pursue is to **add another animal to his herd. And another; and another.** . . . **But this is the conclusion reached by** each and **every rational herdsman** sharing a commons. **Therein is the tragedy. Each man is locked into a system that compels him to increase his herd** without limit—**in a world that is limited. Ruin is the destination toward which all men rush**, each pursuing his own best interest in a society that believes in the freedom of the commons. **Freedom in a commons brings ruin to all.** Some would say that this is a platitude. Would that it were! In a sense, it was learned thousands of years ago, but natural selection favors the forces of psychological denial (8). The individual benefits as an individual from his ability to deny the truth even though society as a whole, of which he is a part, suffers. Education can counteract the natural tendency to do the wrong thing, but the inexorable succession of generations requires that the basis for this knowledge be constantly refreshed.

Thus, I affirm today’s resolution, developing countries should prioritize environmental protection over resource extraction when the two conflict.

English Language and Usage[[2]](#footnote-2) defines “should” as “ought to.”

I value morality, as “should” is a normative term, establishing what is right or wrong.

Every individual has a right to their own body, which entails respect for property rights. Zev **Tractenberg 7** writes[[3]](#footnote-3)

Locke’s solution rests on his “self-ownership” thesis. He holds that there is an exception to the original condition of common ownership of the goods of the earth: **each person has an exclusive right to** his or **her** own **body**. Locke appeals to that exclusive right to explain how individuals can obtain an exclusive right to what begins as a commonly owned item in nature. The key is his observation that **people must physically transform nature** in order **to consume** those **items they need to survive**: the apple must be picked from the tree before it can be eaten. The physical activity of the person—**the labor of his or her bod**y—**is “mixed” with the item, marking it off as** no longer common, but rather as exclusive, **private property.** We must leave aside the puzzles associated with the mixing metaphor; 4 let us simply note that **Locke invests our relationship to certain external objects (our property) with the moral authority of our autonomous selfhood**—our right over our own bodies. Note also that, for Locke, both the general entitlement to some property or other, as needed to support survival, and the specific entitlement to one’s own body, hence to the items one appropriates through labor, stem directly from God. **Therefore he characterizes property as a natural right, justified in terms of natural law.** Locke’s account is particularly vivid with respect to items that are hunted or gathered from nature. But the relatively low-impact harvesting of readily available natural products is short of the fuller sense of habitation his theory provides. For, he uses the labor theory to justify property rights in the habitat itself: beyond spontaneous products that can be foraged, agricultural labor grounds ownership of the transformed land. “As much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property” (Locke 2T, § 31).

The right to private property entails a duty to not waste the property we own.

Peter **Railton 3** writes[[4]](#footnote-4)

A simple, appealing picture of morality informs much contemporary thought and action. On this view, individuals have certain natural rights that give them freedom to act in certain ways and oblige others not to interfere. The archetype of such a right is the right of private property. If Harlan has exclusive ownership of a pumpkin, it is his to do with as he pleases, and no one may rightfully take it from him or hinder him in his enjoyment of it. His right entitles him to exclude others from making any use of his pumpkin to which he does not consent. Of course, Harlan’s property right is limited by similar rights of others. He cannot, without permission, rightfully lob his pumpkin onto another’s porch. He is free to transfer his pumpkin to another, or to give him use of it, and although such contracts or gifts, once made, bring with them new obligations to carry out promises rendered, these further limits are self-imposed. In the classic, Lockean form of this view, **individuals have** some **property rights** wholly independent of civil law: property in one’s own body and its capacities, **and a right to appropriate common property for one’s own use by mixing one’s** own **labor with it, so long as one does not waste and “enough and as good” is left in common for others**.2 **These** initial, **“natural” property rights form the basis for** whatever **further property rights individuals may acquire by** harvesting the fruits of nature or **exchanging goods or labor** with others. In the fullness of time, some individuals may acquire more extensive property entitlements than others and may transfer this wealth to whomever they please, but all retain an equal, natural right not to be harmed in person or (other) property.3 From this Lockean view emerges an image of moral space akin to a map at a registrar of deeds. Individual entitlements or rights determine a patchwork of boundaries within which people are free to live as they choose so long as they respect the boundaries of others.4 To learn one’s moral obligations one need only consult the map. Would a given act involve crossing another’s boundary?5 If so, it is prohibited; if not, permitted.6 **This Lockean view** is often called antipaternalistic because it holds that individuals are entitled to final say over what happens within their own boundaries. It is also often called libertarian, since it is so centrally concerned with preserving a field of individual freedom of choice. It **is not, however, equivalent to the view that we should maximize individual freedom of choice: that is an aggregative, social goal**, foreign to the Lockean picture. If the choices individuals make within their boundaries, and the mutual arrangements they make across their boundaries, do not result in a social scheme with maximum individual freedom, that is perfectly acceptable. **Individual entitlements** and decisions **define the limits within which any social goal** or policy **may legitimately be pursued, including** the policy of **promoting freedom.**

Thus the standard is consistency with Lockean property rights.

I advocate that developing countries should accept the Precautionary Principle on resource extraction issues. The Precautionary Principle is not a specific policy action but a decision rule which guides future policies. The Precautionary Principle is defined by the Wingspread Statement, which **Tickner et al. 99** explain[[5]](#footnote-5)

The first major effort in the United States to bring the precautionary principle to the level of day-to-day environmental and public health decision-making at the state or federal level was a January 1998 conference of activists, scholars, scientists, and lawyers at Wingspread, home of the Johnson Foundation in Racine, Wisconsin. Convened by the Science and Environmental Health Network (SEHN), participants discussed methods to implement the precautionary principle and barriers to that implementation. **The Wingspread definition** of precaution (see Appendix) **has three elements: threats of harm; scientific uncertainty; and preventive, precautionary action. The litmus test for** knowing **when to apply the p**recautionary **p**rinciple **is the combination of threat of harm and scientific uncertainty.** Some would say the threatened harm must be serious or irreversible, but others point out that this does not allow for the cumulative effects of relatively small insults. **If there is certainty about cause and effect**, as in the case of lead and children's health, **then acting is no longer precautionary**, although it might be preventive. In essence, the precautionary principle provides a rationale for taking action against a practice or substance in the absence of scientific certainty rather than continuing the suspect practice while it is under study, or without study. **Instead of asking what level of harm is acceptable, a precautionary approach asks:** How much contamination can be avoided? **What are the alternatives to this** product or **activity, and are they safer?** Is this activity even necessary? **The p**recautionary **p**rinciple **focuses on options and solutions rather than risk. It forces the initiator of an activity to address fundamental questions of how to behave in a more environmentally sensitive manner**. The precautionary principle also serves as a "speed bump" to new technology, ensuring that decisions about new activities are made thoughtfully and in the light of potential consequences.

The precautionary principle prioritizes environmental protection. Founder of the Science and Environmental Health Network Carolyn **Raffensperger 4** writes[[6]](#footnote-6)

It is quite simple. It has three building blocks. One is scientific uncertainty. The second is the likelihood or the plausibility of harm. The third element is precautionary action. **The mandate of the Precautionary Principle is to take preventive action in the face of uncertainty to prevent harm. The focus is no longer** on **measuring and managing harm, but preventing harm. Critics of the Precautionary Principle say that it is going to stop all action** or stop all progress**, and yet** the Precautionary Principle invites action: **it says you've got to take action.** **That** has in many ways galvanized us; it **gives us a way of operationalizing environmental protection.**

The precautionary principle is key to solving environmental harms. We can’t afford to wait for scientific certainty. The **Science and Environmental Health Network 98** writes[[7]](#footnote-7)

What is the precautionary principle? A comprehensive definition of the precautionary principle was spelled out in a January 1998 meeting of scientists, lawyers, policy makers and environmentalists at Wingspread, headquarters of the Johnson Foundation in Racine, Wisconsin. **The Wingspread Statement** on the Precautionary Principle, **summarizes the principle** this way**: "When an activity raises threats of harm to the environment** or human health, **precautionary measures should be taken even if** some **cause and effect relationships are not fully established scientifically."** Key elements of the principle include taking precaution in the face of scientific uncertainty; exploring alternatives to possibly harmful actions; placing the burden of proof on proponents of an activity rather than on victims or potential victims of the activity; and using democratic processes to carry out and enforce the principle - including the public right to informed consent. Is there some special meaning for "precaution"? It's the common sense idea behind many adages: "Be careful." "Better safe than sorry." "Look before you leap." "First do no harm." What about "scientific uncertainty"? Why should we take action before science tells us what is harmful or what is causing harm? **Sometimes if we wait for proof it is too late**. Scientific standards for demonstrating cause and effect are very high. For example, smoking was strongly suspected of causing lung cancer long before the link was demonstrated conclusively - that is, to the satisfaction of scientific standards of cause and effect. By then, many smokers had died of lung cancer. But many other people had already quit smoking because of the growing evidence that smoking was linked to lung cancer. These people were wisely exercising precaution despite some scientific uncertainty. **Often a problem** - such as a cluster of cancer cases or global warming - **is too large**, its causes too diverse, or the effects too long term **to be sorted out with scientific experiments** that would prove cause and effect. It's hard to take these problems into the laboratory. Instead, **we have to rely on** observations, case studies or **predictions based on current knowledge.** According to the precautionary principle, when substantial scientific evidence of any kind gives us good reason to believe that an activity, technology or substance may be harmful, we should act to prevent harm. **If we always wait for scientific certainty, people may suffer and die, and damage to the natural world may be irreversible.** We have lots of environmental regulations. Aren't we already exercising precaution? In some cases, to some extent, yes. When federal money is to be used in a major project, such as building a road on forested land or developing federal waste programs, the planners must produce an "environmental impact statement" to show how it will affect the surroundings. Then the public has a right to help determine whether the study has been thorough and all the alternatives considered. That is a precautionary action. But most environmental regulations, such as the Clean Air Act, the Clean Water Act and the Superfund Law, are aimed at cleaning up pollution and controlling the amount of it released into the environment. They regulate toxic substances as they are emitted rather than limiting their use or production in the first place. These laws have served an important purpose - they have given us cleaner air, water and land. But they are based on the assumption that humans and ecosystems can absorb a certain amount of contamination without being harmed. We are now learning how difficult it is to know what levels of contamination, if any, are safe. Many of our food and drug laws and practices are more precautionary. Before a drug is introduced into the marketplace, the manufacturer must demonstrate that it is safe and effective. Then people must be told about risks and side effects before they use it. But there are some major loopholes in our regulations. If the precautionary principle were universally applied, many toxic substances, contaminants, and unsafe practices would not be produced or used in the first place. The precautionary principle concentrates on prevention rather than cure. How would **the precautionary principle** change that without bringing the economy to a halt? It **would encourage** the **exploration of** alternatives - better, safer, cheaper ways to do things- and the development of **"cleaner" products and technologies.** Sometimes simply slowing down in order to learn more about potential harm is the best alternative. **It would shift the burden of proof** from the public **to proponents of a technology.** The principle would ensure that the public knows about and has a say in the deployment of technologies that may be hazardous. **Proponents would have to demonstrate** through an open process **that** a **tech**nology **was safe or necessary and that no better alternatives were available.**

## Contentions

My first contention is that Locke’s view of property rights entails environmental protection.

To resist the tragedy of the commons, developing countries must prioritize sustainability. Zev **Tractenberg 7** writes[[8]](#footnote-8)

Finally, the usufructory character of property points toward the third way Locke can be used to lend support to sustainability—by way of a re-interpretation of his theory of the state. The system of **individual appropriation** envisioned by the standard reading of Locke **leads, via** the mechanism of **the tragedy of the commons, to unsustainable harvests and** eventual **resource crashes**—as in the over-fishing case just mentioned. **But** if we take into account the role **Locke** assigns the state, we can see that he **would** actually **fully support a public management policy aimed at sustainable yield.** The standard idea that Locke supports a minimal state dedicated solely to the protection of natural property rights misses two crucial points. On the one hand, it misconstrues Locke’s conception of property, taking it to be absolute instead of usufructory; on the other it ignores **Locke**’s repeated **assert**ion**s that the state must act to protect the common** (or public) **good** (2T, §§ 89, 131, 134, 135, 142). Framing individual property as usufructory highlights the interdependence of property rights: **each individual’s ability to exercise** his or **her right relies on the condition of the underlying system that generates the goods in question. Protecting** each individual’s **property thus requires the maintenance of the underlying system—**in a word, requires **that the earth be used sustainably.** In particular, each individual’s rights must be protected against unsustainable exercises by other individuals of their rights. Thus, Locke licenses the state to coordinate individuals’ exercise of property rights, so that their aggregate affect is not harmful. Though the state may not deprive anyone of his or her property, Locke acknowledges that “the prince, or senate, [has] power to make laws, for the regulating of property between the subjects one amongst another” (2T, § 139 (my emphasis)). Locke must think that this power may operate to restrain adverse impacts in the future as well as in the present. Because people across time have equal moral footing, that is, the state may regulate individuals so that their actions do not interfere with the rights of people later in time.12 Precisely in virtue of assigning the state the role of preserving property, that is, Locke’s theory can be interpreted as assigning it the role of enforcing a policy of sustainability.

My second contention is that our obligation to protect future generations from environmental destruction is a litmus test for any view of morality.

Professor Stephen **Bickham 81** writes[[9]](#footnote-9)

There exists today in philosophy a question of our ethical obligations to future generations. Several different aspects of this question render it philosophically unusual. For one thing the substantive answer to the question is not in dispute. **Were someone to suggest seriously that we have no ethical obligations to future generations and** mean **by this that we need take no care for what living conditions on the planet will be in a hundred years** - that whether there would exist then, say, a lethal level of radioactivity in the atmosphere, it would be no concern of ours - **we should regard that individual as lacking one of the most basic of human ethical sensibilities.** Of course we have some serious responsibility for the future, though this does not commit us to the more particular position that we have ethical obligations to future generations. The question does not, thus, require an answer at the general level, nor am I prepared here to demarcate specifically the content of our responsibility for the future, though I shall treat of others' attempts to do so. I am interested rather in why this question should seem so mysterious at this time as to generate a dispute or issue within the philosophical community. Thus my focus will be interior to philosophy. I hope to show how the assumptions involved in raising this question in this way make it difficult for us to address the new realities with which the question is concerned. Why is this question a current one in philosophy? From a somewhat sociological perspective it is significant that John Rawls in A Theory of Justice, perhaps the most influential ethical treatise of the seventies, is the first person who seems to have dealt with the question in its current form.' I shall examine Rawls' position in detail later, but basically he treats justice among generations as involving each generation's passing on to the next a suitable accumulation of intellectual, economic, and educational "capital" so that the next can have the werewithal to continue or to establish just institutions, as well as support a reasonable standard of living.2 While the immense philosophical popularity of A Theory of Justice brought the current question to the attention of the philosophical community, most philosophers writing of the issue of ethical obligation to future generations since Rawls have seen the problem in an environmental rather than an economic context? It is clear that **our relatively new capacity for** possibly **permanent devastation of the environment has created a new ethical situation which requires a reassessment of our responsibility to the future.** Environmental pollution itself is nothing new. I am sitting a quarter of a mile from a river which has contained no life for about 80 years due to pollution from mine acid waste. In my county virtually every marketable tree was cut down between 1895 and 1915. But **until now there** just **have not been enough people nor** an **advanced enough tech**nology **to threaten a large environment with permanent destruction** or impairment. Trees grow back and mine acid waste pollution can be stopped, though it is expensive to do so. But we simply do not know how to render radioactive waste from power plants nonradioactive, or to replace the ozone layer in the atmosphere should this become depleted, or to develop an effective, economical replacement for iron. It is quite simple. **We did not have** the **responsibility for the future that we do now before we had the capacity to destroy it**. As I said earlier, our responsibility for the future in a broad sense is well recognized. What is not understood is how this responsibility is to be rationally grounded in an ethical theory. But it is becoming clear to ethicists that **the question of our obligations to the future can be seen as a litmus test for an ethical theory.** No theory can really be adequate to the contemporary situation which cannot found such obligations on its own principles. The problem is that each of the major, current ethical theories has difficulty doing this. I shall examine briefly the deontological theory and at more length the utilitarian and contractarian theories to illustrate why this is so.

My third contention is that resource extraction doesn’t benefit developing economies, and environmental damage uniquely harms productive investment.

**Singh and Bourgouin 13** write[[10]](#footnote-10)

Natural resource capital represents a particular type of capital. Most obviously, it is cyclically prone to windfall booms and busts. Historically, resource commodities have been subjected to external shocks and sharp flux in commodity prices, as was seen with the severe contraction of demands for certain minerals in the wakes of the two World Wars and the Great Depression (Bulmer, 1994). With global market integration, commodity prices have increasingly become susceptible to speculation in the international minerals markets, which adversely affect the production processes (Webb, 1999). From both an economic as well as a policy viewpoint, **extractive resources’** relative absence of value added together with their **price volatility** on world markets **make them an unreliable source of income** for national governments (Auty, 1993; Humphreys et al., 2007; Sachs & Warner, 1997, 2001). Moreover, booming **resource sectors** are believed to **draw capital** and labour away **from** a country’s **manufacturing and ag**ricultural sectors, thereby raising their production costs (Ross, 2001: 305) and leading to the appreciation of real exchange rates caused by the sharp rise in commodity exports, an observation referred to as the Dutch Disease . **Hence,** resource-led development is considered unlikely as **booms fail to bring investments into** the **more stable and dynamic sectors of the economy**, such as manufacturing, but instead, direct investment and factor inputs towards the resource sector. Similarly, the open access exploitation hypothesis suggests that not only does extraction under open access conditions generate few resource rents to be reinvested but it also leads to over-exploitation of natural capital in the long run, thus curbing the development potential of the resource sector. For others, **unfavourable environmental conditions may directly inhibit** the efficient generation of natural resource rents and **sustainable returns through** the **reinvestment** of rents **into** other **productive assets, as well as indirectly through** a **long-lasting influence on** patterns of **political and legal** institutional **development** (Auty, 2001, 1993; Barbier, 2005, 2003; Easterly & Levine, 2003). The observed inability of developing states to transform resource wealth into productive capital over past decades has become the central preoccupation of economists and political scientists alike, not to mention of scholars of development. The dominant view is that the revenues generated from natural capital are not comparable to income that can be reinvested as profits. Unlike in the productive sectors of the economy, **windfall profits from extraction do not multiply and as** the **resources** upon which they are based **are de facto depletable, extractive industries are unsustainable over the long run** (Humphreys et al., 2007; Karl, 2007 ). In this regard, the recent tendency of turning resource revenues into sovereign wealth funds (SWFs) that cannot be spent in the domestic economy has become the prescriptive response of the World Bank to reduce the deleterious effects of uncertainty in the resource sector.

My fourth contention is that environmental protection is essential to solving poverty. Emeka **Amechi 10** writes[[11]](#footnote-11)

**Environmental degradation and poverty are** inextricably **intertwined**.5 The consequence of this linkage is a vicious cycle in which poverty causes the degradation of the environment, and such degradation in turn perpetuates more poverty.6 As aptly observed by Fabra ‘…poverty and environmental degradation are often bound together in a mutually reinforcing vicious cycle, and thus human rights abuses related to poverty can be both cause and effects of environmental problems’.7 It follows that if poverty is the main cause of environmental degradation in Africa, then policies, programmes and legal provisions (regulations, bylaws, rules etc) designed to protect the environment in the region will be unsuccessful without a significant improvement in the living standards, wellbeing and livelihoods of the poor.8 However, this is not an exclusive relationship as the protection of the environment is vital to the achievement of poverty reduction in Africa.9 This is due to the fact that **the poor in Africa**, who are mostly found in the rural areas of the region, **are** basically **reliant on resources** obtainable from their environment **for sustenance**, and hence, are severely affected by environmental degradation.10 As aptly stated by Kante, ‘for the poor, nature offers a series of goods of inestimable value, on which they depend absolutely: That sums up their life. **Environmental damage**, which represents a financial loss for the rich, **is** a much more **serious** matter **for the poor, leading to** the **loss of their livelihood’.**11 Therefore, it can be argued that **any sustainable approach to** the **reduction of poverty** in Africa **requires** an **improvement of the** natural **resource base** upon which most of the poor are dependent on.12 **This** argument **has been recognised by** various **experts with regard to** the realisation of **the** Millennium Development Goals (**MDGs**)**, a** poverty reduction **strategy** that seeks to improve the well-being and livelihood of the poor in Africa.13 The MDGs are now **generally accepted as a blueprint for poverty reduction and** overall **sustainable development of developing countries** in the 21st century.14

Finally, respecting the environment is our paramount moral obligation.

Professor Herschel **Elliott 3** writes[[12]](#footnote-12)

An **ethics** capable of being practiced **in a finite world must be founded on the moral obligation never to cause the environment to break down. This** obligation **stipulates a necessary condition for moral life.** It can be stated as the environmental principle, namely, to preserve the endurance and the resilience of the earth's system of living things. This principle cannot be justified by appeals to reason or the infallible revelations of God. It cannot be justified by valid inferences from human-centered definitions and universal moral principles. And **it is not subject to** scholarly **rebuttal by professionals in moral philosophy. Rather, it is a factual necessity. Any ethics which denies the environmental principle is doomed to fail. People who live by an ethics which denies it simply die out.** In effect, **the moral certainty of the environmental principle is proved by the absurdity of its denial.**

1. Garrett Hardin. “The Tragedy of the Commons.” 1968. http://eesc.columbia.edu/courses/v1003/lectures/population/Tragedy%20of%20the%20Commons.pdf [↑](#footnote-ref-1)
2. http://english.stackexchange.com/questions/4972/difference-between-should-and-ought-to [↑](#footnote-ref-2)
3. Associate Professor of Philosophy at Oklahoma University. ““This habitable earth of ours:” Locke on humanity in the environment” [↑](#footnote-ref-3)
4. John Stephenson Perrin Professor of Philosophy at the University of Michigan, Ann Arbor. “Locke, Stock, and Peril: Natural Property Rights, Pollution, and Risk” in *Facts, Values, Norms*. [↑](#footnote-ref-4)
5. Joel Tickner (Lowell Center for Sustainable Production), Carolyn Raffensperger and Nancy Meyers (SEHN). “The precautionary principle in action: A handbook.” Science and Environmental Health Network. 1999. [↑](#footnote-ref-5)
6. Carolyn Raffensperger (the founding executive director of the Science and Environmental Health Network; environmental lawyer; Raffensperger is co-editor of Protecting Public Health and the Environment: Implementing the Precautionary Principle, the most comprehensive exploration to date of the history, theory and implementation of the Precautionary Principle). “Precautionary Precepts: The Power and Potential of the Precautionary Principle.” 2004.<http://multinationalmonitor.org/mm2004/09012004/september04interviewraffen.html> [↑](#footnote-ref-6)
7. Science and Environmental Health Network. “The Precautionary Principle: A Fact Sheet.” March 1998. <http://www.sehn.org/Volume_3-1.html> [↑](#footnote-ref-7)
8. Associate Professor of Philosophy at Oklahoma University. ““This habitable earth of ours:” Locke on humanity in the environment” [↑](#footnote-ref-8)
9. Stephen Bickham (Professor of Philosophy at Mansfield State College). “Future Generations and Contemporary Ethical Theory.” 1981. <http://profs-polisci.mcgill.ca/muniz/intergen/Bickham%20-%20Future%20generations%20and%20contemporary%20ethical%20theory.pdf> [↑](#footnote-ref-9)
10. Jewellord Nem Singh and France Bourgouin (editors of this book). “Resource Governance and Developmental States in the Global South.” Palgrave Macmillan. November 2013. <http://www.palgrave.com/PDFs/9781137286789.pdf> [↑](#footnote-ref-10)
11. Emeka Polycarp Amechi (PhD (Wits). Barrister and Solicitor of the Supreme Court of Nigeria). ‘Linking Environmental Protection and Poverty Reduction in Africa: An Analysis of the Regional Legal Responses to Environmental Protection’, 6/2 *Law, Environment and Development Journal* (2010), p. 112. http://www.lead-journal.org/content/10112.pdf [↑](#footnote-ref-11)
12. Herschel Elliott (Penn State Professor of Agricultural and Biological Engineering

    Fate And Control Of Pollutants In Soils And Water), “Tributes to Garrett Hardin The Revolutionary Import of Garrett Hardin's Work.” The Garrett Hardin Society. July, 2003. <http://www.garretthardinsociety.org/tributes/tr_elliot_2003jul.html> [↑](#footnote-ref-12)